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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/831,411	05/07/2001	Andrew J. Sanderson	1082-033	4272

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EXAMINER
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FEELY, MICHAEL J

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 03/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/831,411

Applicant(s)

SANDERSON ET AL.

Examiner

Michael J. Feely

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4,6,7,9,11-22,24,25,27 and 29-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-4,6,7,9,11-22,24,25 and 30-33 is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☒ Claim(s) 27 and 29 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>1204</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Pending Claims***

1. Claims 1-4, 6, 7, 9, 11-22, 24, 25, 27, and 29-33 are pending

***Previous Claim Objections***

2. The previous objection to claims 5-11 has been withdrawn.

***Previous Claim Rejections - 35 USC § 112***

3. The previous rejection of claims 5 and 6 under 35 U.S.C. 112, second paragraph, has been withdrawn.

***Previous Claim Rejections - 35 USC § 103***

4. The previous rejection of claims 8 and 10 under 35 U.S.C. 103(a) as being unpatentable over Wardle (US Pat. No. 4,806,613) has been rendered moot by the cancellation of claims 8 and 10.
5. The previous rejection of claims 1-4, 7, 9, 11, 19-22, and 30-33 under 35 U.S.C. 103(a) as being unpatentable over Wardle (US Pat. No. 4,806,613) has been withdrawn.

***Previous Double Patenting Rejections***

6. The previous provisional rejection of claim 23 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-6 and 11 of copending Application No. 09/436,440 in view of Wardle et al. (US Pat. No. 4,806,613) has been rendered moot by the cancellation of claim 23.
7. The previous provisional rejection of claims 12-18, and 24 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-6 and 11 of

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copending Application No. 09/436,440 in view of Wardle et al. (US Pat. No. 4,806,613) has been withdrawn.

8. The previous provisional rejection of claims 26 and 28 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-6 of copending Application No. 09/436,440 has been rendered moot by the cancellation of claims 26 and 28.

9. The previous provisional rejection of claims 25, 27, and 29 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-6 of copending Application No. 09/436,440 has been withdrawn.

***Previous Allowable Subject Matter***

10. The previous indication of claims 5 and 6 as containing allowable subject matter has been withdrawn.

***Response to Arguments***

11. Applicant's arguments, filed December 10, 2004 have been fully considered and are persuasive.

Most notably, Applicants included the following in their response:

*Applicants note that there appears to be a discrepancy between the pending claims on file with the United States Patent and Trademark Office (the "office") and the claims used by the Examiner in preparing the outstanding Office Action. Applicants contacted the Examiner on October 28, 2004, and also ordered a copy of the file-to-date from the Office in an attempt to clarify the discrepancy. After reviewing the file-to-date, Applicants believe that the instant application has been confused with a co-pending application provided to the Office on the same date, as explained in detail below.*

*The instant application, Serial No. 09/831,411 entitled "Method for the Synthesis of Energetic Thermoplastic Elastomers in Non-Halogenated Solvents," was filed with the Office on May 7, 2001, under 35 U.S.C. § 371. (Emphasis added). As described in the "Transmittal Letter to the United States Designated Elected Office (DO/EO/US) Concerning a Filing Under 35 U.S.C. 371" (the "Transmittal Letter"), the instant application is a national stage application of*

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*PCT/US99/24013, which includes 33 claims and claims priority to a provisional application having a Serial No. of 60/108,455. The Transmittal Letter also indicates that the instant application includes 33 claims.*

*In addition to the instant application, a Preliminary Amendment and an Information Disclosure Statement ("IDS") were filed with the Office on May 7, 2001. In the Preliminary Amendment, claims 1-4, 19-22, and 30-33 were amended. In regard to the IDS, a copy of a co-pending application having the Serial No. 09/436,440 and entitled "Synthesis of Energetic Thermoplastic Elastomers Containing Oligomeric Urethane Linkages" was provided. (Emphasis added). This co-pending application includes claims 1-30, which are drawn to a thermoplastic elastomer, and claims priority to a provisional application having a Serial No. of 60/108,456.*

*After reviewing the file-to-date, it appears that upon receipt of these documents by the Office, the copy of the co-pending application provided with the IDS was incorrectly stamped with the Serial No. of 09/831,411 rather than the instant application being stamped with that Serial No. Applicants note that the co-pending application provided with the IDS includes claims 1-30, which are drawn to a thermoplastic elastomer, while the instant application includes claims 1-33, which are drawn to a method of preparing a thermoplastic elastomer. In addition, the co-pending application and the instant application have different titles. Since the Serial No. of 09/831,411 was incorrectly stamped on the copy of the co-pending application provided with the IDS, Applicants believe that the Examiner has relied on the claims of the co-pending application, rather than the claims of the instant application, in preparing the outstanding Office Action.*

*Applicants respectfully submit that the Serial No. of 09/831,411, which is currently stamped on the copy of the co-pending application entitled "Synthesis of Energetic Thermoplastic Elastomers Containing Oligomeric Urethane Linkages" in the Office file, has been stamped on the wrong application. Applicants respectfully request that the application entitled "Method for the Synthesis of Energetic Thermoplastic Elastomers in Non-Halogenated Solvents," be properly indicated in the Office file with the Serial No. of 09/831,411. In responding to the outstanding Office Action, the claims presented herein reflect the claims filed with the Office on May 7, 2001, which were based on the claims in PCT/US99/24013, as amended by the Preliminary Amendment filed on May 7, 2001.*

**After carefully reviewing the file history, it has been determined that the Applicants are correct. As a result, the substitute Specification and Claims have been entered. In addition, all previous Objections and Rejections have been withdrawn.**

*New Claim Objections*

12. Claims 27 and 29 are objected to because of the following informalities: claim 27 is dependent from cancelled claim 26, and claim 29 is dependent from cancelled claim 28. It appears that the dependency of these claims should go back to claim 19. Appropriate correction is required.

*Allowable Subject Matter*

13. Claims 1-4, 6, 7, 9, 11-22, 24, 25, and 30-33 are allowed.

14. Claims 27 and 29 would be allowable if rewritten to overcome the objection(s) set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

15. The following is a statement of reasons for the indication of allowable subject matter:

*Independent claim 1* features the process steps of:

- Dissolving polymer blocks (*see claim for details*) into a solution comprising at least one non-halogenated solvent selected from the group consisting of at least one organic ether, at least one organic ester, and at least one organic ketone;
- Drying the blocks of water by azeotropic distillation of the at least one non-halogenated solvent;
- End-capping the dried blocks with at least one diisocyanate (*see claim for details*) in the at least one non-halogenated solvent; and
- Linking the end-capped blocks together with at least one linking compound (*see claim for details*) in the at least one non-halogenated solvent.

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*Independent claim 19* features the above process steps along with the step of:

- Blending the product with about 50 wt% to about 95 wt% of at least one solid selected from the group consisting of fuel particles and oxidizer particles.

The closest prior art is Wardle (US Pat. No. 4,806,613). They teach the steps of *Dissolving, End-Capping, Linking, and Blending*; however, the reference is deficient in that it does not teach:

- (a) the step of azeotropic distillation, and
- (b) the use of a non-halogenated solvent.

He only describes the use of a *suitable solvent* in the *End-Capping* step, and uses methylene chloride in the working examples. Although a non-halogenated solvent *could have* been used as a *suitable solvent*, the prior art provides no motivation to do so. The prior art fails to establish that non-halogenated solvents are recognized in the art as suitable solvents for each step in this type of reaction process.

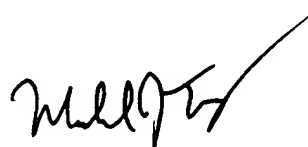
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*Communication*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J Feely whose telephone number is 571-272-1086. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael J. Feely  
Patent Examiner  
Art Unit 1712

March 4, 2005